

Notice of Allowability

Application No.

09/576,652

Examiner

Raymond S Dean

Applicant(s)

HAGEN ET AL.

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2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to August 5, 2004.
2. ☒ The allowed claim(s) is/are 1 - 19.
3. ☒ The drawings filed on 05 August 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 0704, 0804
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Drawings

1. The drawings were received on August 5, 2004. These drawings are acceptable.

Allowable Subject Matter

2. The following is an examiner's statement of reasons for allowance: Weinberg teaches a method of transmitting communications signals to a plurality of mobile terminals, comprising: processing a received signal at a ground hub and re-radiating said signal from said at least two satellites to an intended mobile terminal (Figure 2, Column 2 lines 43 – 47, Column 3 lines 58 – 67, Column 4 lines 1 – 8, Column 7 lines 23 – 28, this method is the "bent pipe" method, there are a total of six satellites from which to re-radiate signals from the ground). Hassan teaches radiating a first portion of said signal and a second portion of said signal through multiple paths to at least two satellites and combining the first portion of the signal and the second portion of the signal (Column 3 lines 33 – 55). Leopold teaches an orbit of said satellite that is perturbed in inclination and eccentricity (Figure 4, Column 7 lines 32 – 39, Column 7 lines 46 – 63). **The prior art of record, however, fails to teach an orbit of said satellite that is perturbed in inclination and eccentricity relative to a common geosynchronous reference orbit and whereby the apparent satellite motion of said at least two satellites about the geosynchronous reference orbit remain substantially uniform.** Claim 2 depends on Claim 1, Claim 3 depends on Claim 2,

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Claim 4 depends on Claim 3, Claims 5 and 6 depend on Claim 4 therefore examiner gives same reason as set forth above.

Leopold teaches a mobile wireless communication system comprising: a satellite constellation consisting of a plurality of satellites (Figure 3) with each of said plurality of satellites being capable of relaying signals between the ground hub and the plurality of user terminals in either direction (Column 5 lines 21 – 28, Column 5 lines 39 – 42). **The prior art of record, however, fails to teach each of the plurality of satellites in an orbit that is a perturbed geosynchronous orbit centered about a geosynchronous reference orbit position. The prior art of record also fails to teach a satellite constellation that appears to rotate at a uniform rate above the geosynchronous reference orbit as viewed by a single user so that the apparent inter-satellite spatial relationships are maintained.** Claims 8, 9, 11, and 12 are dependent on Claim 7. Claim 10 depends on Claim 8, and Claim 13 depends on Claim 10 therefore examiner gives same reason as set forth above.

Weinberg teaches a method for establishing a link between a ground hub and a plurality of mobile terminals comprising: preprocessing a received signal at said ground hub (Figure 2, Column 3 lines 58 – 67, Column 4 lines 1 – 8). Hassan teaches transmitting a first portion and a second portion of said signal through different paths to a plurality of satellites in a satellite constellation and combining the first portion of the signal and the second portion of the signal at the mobile terminal to reform the signal (Column 3 lines 33 – 55). Leopold teaches perturbing the inclination and eccentricity of said plurality of satellites (Figure 4, Column 7 lines 32 – 39, Column 7 lines 46 – 63).

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The prior art of record, however, fails to teach perturbing the inclination and eccentricity of said plurality of satellites relative to a common geosynchronous reference orbit; and determining a relationship between said inclination and said eccentricity of said plurality of satellites such that they appear to move at a constant speed along circular paths where centers are located at a position defined by a hypothetical reference satellite in an unperturbed geosynchronous orbit. Claims 15 – 19 depend on Claim 14 therefore examiner gives same reason as set forth above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

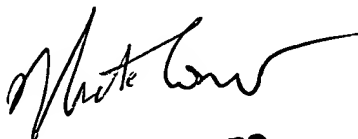
Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond S Dean whose telephone number is 703-305-8998. The examiner can normally be reached on 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay A Maung can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



NICK CORSARO
PRIMARY EXAMINER



Raymond S. Dean
January 31, 2005